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(54) **Auxiliary Viewfinder System for Motion Picture Cameras**

(57) The invention provides a motion picture camera of the reflux type in which an image produced by the taking lens 1 is viewed through an eyepiece 7 of a viewfinder by way of a reflective device 6, in which a detachable coupling 8 is provided by means of which a further device 9 can be connected to the camera to view or receive that image produced by the taking lens.

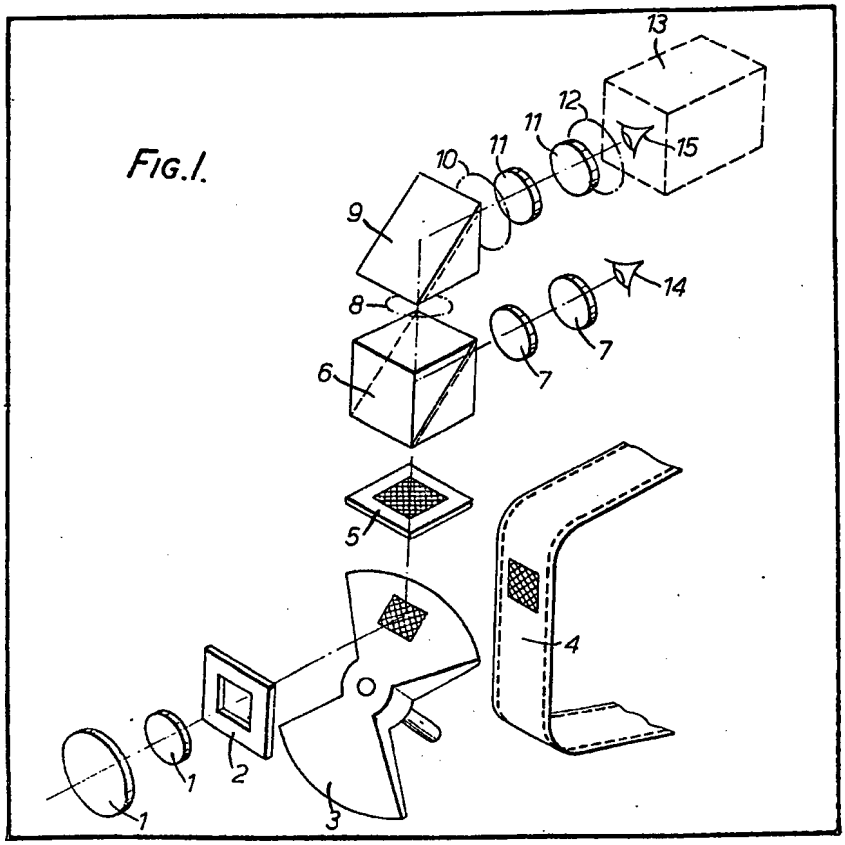

FIG. 1.

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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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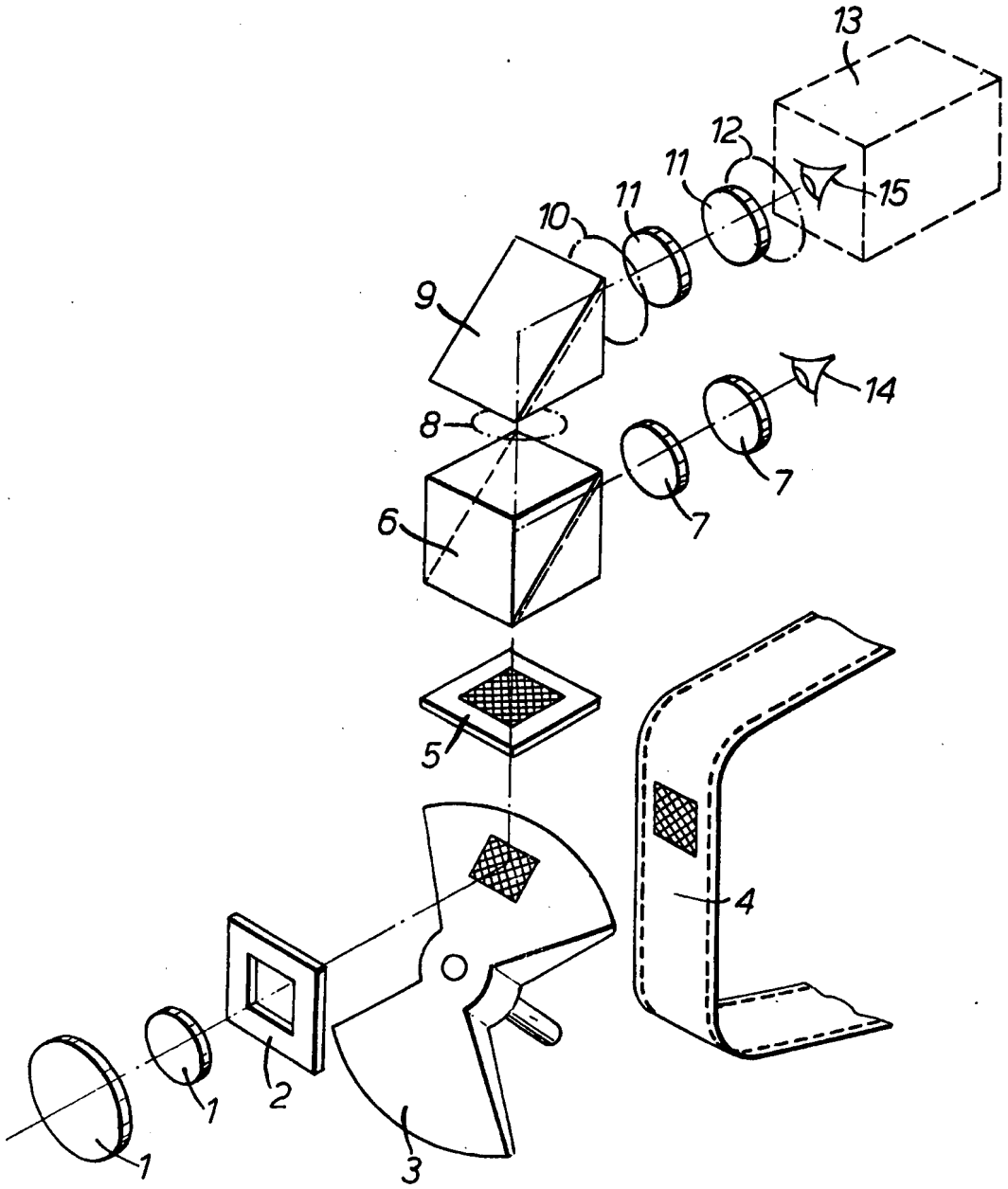

FIG.1.

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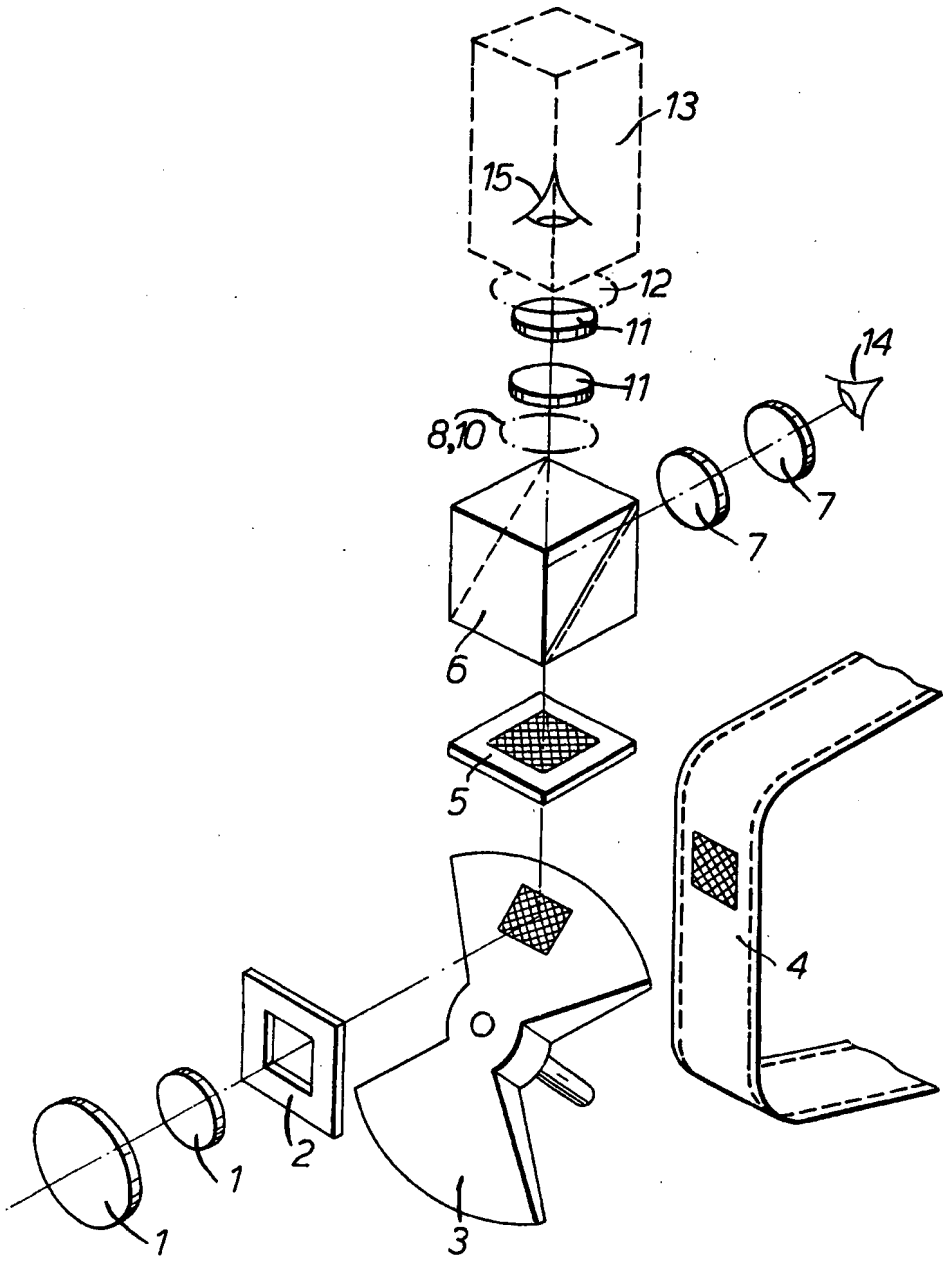

FIG. 2.

SPECIFICATION

Auxiliary Viewfinder System for Motion Picture Cameras

This invention relates to motion picture cameras, and is concerned with the utilisation of auxiliary viewfinder systems on such cameras.

Motion picture cameras usually employ a method of reflex viewfinding whereby an image from the camera "taking" lens is directed onto a focussing screen to form an image which is viewed by the cameraman or a camera operator. The focussing screen may take the form of a ground glass screen, a fibre optic screen or a clear glass from which an aerial image may be taken.

In some instances a partial or full view mirror is interposed between the image on the focussing screen and the cameraman's eyepiece or optic so as to provide a second point of view of the focussing screen to permit a television camera to be placed in the light path to provide a video display at a remote point, thus providing a "T.V. viewfinder". Thus by the use of the partial mirror it is possible for the cameraman and the person using the T.V. viewfinder to view the scene being shot by the camera simultaneously.

This invention provides for additional uses of the facility of having two or more views of the focussing screen in a motion picture camera.

In one aspect, a second optical viewfinder eyepiece is provided at the side of the camera offering an alternative and additional place from which the focussing screen may be viewed, thus enabling a second cameraman or other person to see the image as seen through the taking lens of the camera simultaneously, additionally to or instead of the cameraman placed at his usual position at the rear of the camera.

In a second aspect, a second camera is installed such as an instant picture type of camera, typically that sold under the Trade Mark Polaroid, so that a still picture of the image on the focussing screen may be taken for reference purposes, without interfering with the normal operation of the camera and the sight of the focussing screen by the cameraman.

In a third aspect of the invention, means is provided to project an image onto the focussing screen from the opposite direction to the taking lens via the partial mirror, so that the operator may see on the focussing screen superimposed images from the camera taking lens and from the means of projecting a second image, this being useful for reference purposes particularly where a scene is being shot which it is intended to blend optically or otherwise with other separately shot material.

In order to promote a fuller understanding of the above and other aspects of the present invention, an embodiment will now be described, by way of example only, with reference to the accompanying drawings in which:—

Figure 1 shows a first embodiment of the invention, and

Figure 2 shows a modified embodiment.

Figure 1 of the drawing shows in schematic outline the embodiment of the invention.

The motion picture camera is represented by the essential elements thereof comprising a taking lens 1, a mask 2, a reflex mirror shutter or pellicle shutter 3 and a film 4. When the blades of the shutter are in place across the film, the image produced by the taking lens is reflected by the mirror or pellicle on the blades of the shutter on to a ground glass screen indicated at 5. This much of the camera is conventional and is arranged in detail in known manner *per se*.

In order for a first camera operator, whose eye is indicated at 14, to view the image produced on the ground glass screen 5 for focussing, view finding or other purposes, an eyepiece arrangement 7 is provided by which the operator can view the ground glass screen 5 through a pellicle block or half-silvered mirror indicated at 6.

Immediately above the block or mirror 6, a detachable coupling 8, which may for instance be of a bayonet type, is provided. By means of the coupling 8 a prism 9 may be attached to the camera, and by means of a further detachable coupling 10, a variety of further devices may be attached to the camera. In one arrangement a further eyepiece arrangement 11 may be coupled to the coupling 10 so that a further operator, whose eye is indicated at 15, may view the ground glass screen through the prism 9 of the block or mirror 6. In a further arrangement the optical system of a television camera or stills camera such as that indicated schematically at 13 can be coupled to the coupling 10 or 12, so that the image on the ground glass screen 5 can be photographed by the television or stills camera. In a further arrangement, the television camera or stills camera may be replaced by a still or cine projector so that a still or moving image may be projected on to the ground glass screen 5 to be viewed by the operator 14 through the eyepiece 7 in conjunction with the image projected on to the screen 5 by the taking lens 1.

While in the above arrangement the axis of the eyepiece and or camera may be projected as shown parallel to that of the eyepiece 7n it will be appreciated that this can be changed by swivelling the assembly about the coupling 8 to any desired configuration.

Thus it can be seen that a second operator may simultaneously view the scene being filmed without interfering with the view of the first operator. This is convenient where a separate operator is used for focussing the camera while the first operator is concerned with the scene being filmed. In the alternative by this means, still photographs or television pictures of any scene being filmed can be taken without interfering with the view of the operator 14. Again in instances where a scene being filmed is to be interposed or merged with other material filmed separately, such material can be projected on to the screen 5 so that the operator can see the combined image.

The screen 5 may be a ground glass screen, a fibre optic screen or it may be a clear glass screen

from which an aerial image may be viewed.

Figure 2 shows an alternative arrangement where the prism 9 is eliminated. In other respects the arrangement of Figure 2 is the same as that of Figure 1 and the various combinations have been given the same reference numerals. It should be noted that the detachable couplings 8 and 10 are in fact combined in a single coupling, and it should be further noted that the arrangement below the coupling 8 is identical to that of the arrangement of Figure 1.

Claims

1. A motion picture camera of the reflex type in which an image produced by the taking lens is viewed through an eyepiece of a viewfinder by way of a reflective device, in which a detachable coupling is provided by means of which a further device can be connected to the camera to view or receive that image produced by the taking lens.

2. A camera as claimed in Claim 1, in which said viewfinder receives the image produced by the taking lens through a half-silvered mirror or pellicle block by reflection, and said further device receives said image through said half-silvered mirror or pellicle block by transmission.

3. A camera as claimed in Claim 1 or 2, in which said further device receives said image by way of a prism detachably connected to said coupling.

4. A camera as claimed in any preceding claim, in which said further device comprises a still camera, a television camera, an optical eyepiece or an image projecting device.

5. A camera as claimed in any preceding claim, in which said image is formed on a ground glass screen, a viewfinder optic screen, or as an aerial image on a clear glass screen.

6. A camera arrangement substantially as herein described with reference to the accompanying drawings.

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